

CLAIMS

1. (amended) An image compression method comprising:
a preprocessing step of performing preprocessing on input image data; and
a data compressing step of performing a data compression processing on preprocessed image data, wherein
said preprocessing step includes: a filtering region dividing step of dividing said input image data into a plurality of filtering regions; a region designating step of discriminating important regions from unimportant regions in said input image data; and a filtering step of performing a filtering processing on said unimportant regions for each of said filtering regions to attenuate a high frequency component of said input image data,
said data compressing step includes: a block region dividing step of dividing said preprocessed image data into a plurality of block regions, each shape of which is rectangular; an orthogonal transforming step of performing an orthogonal transform processing said image data for each of said block regions; and a quantizing step of quantizing said image data that has been subjected to said orthogonal transform processing for each of said block regions,
each of said filtering regions is a cluster which is smaller than said block region, and which is consisting of one or more adjacent rectangular regions, each of the rectangular regions being obtained by equally dividing each of said block regions by 2^n (where n is a natural number) and each having a size of two or more pixels, and
said filtering processing is performed using a low-pass filter

common to said respective filtering regions.

2. (amended) An image compression apparatus comprising:
preprocessing means for preprocessing input image data; and
data compressing means for performing a data compression
processing on preprocessed image data, wherein

said preprocessing means includes: filtering region dividing
means for dividing said input image data into a plurality of filtering
regions; region designating means for discriminating important regions
from unimportant regions in said input image data; and filtering means
for performing a filtering processing on said unimportant regions for
each of said filtering regions to attenuate the high frequency component
of said input image data,

said data compressing means includes: block region dividing
means for dividing said preprocessed image data into the plurality of
block regions, each shape of which is rectangular; orthogonal
transforming means for performing an orthogonal transform processing
on said image data for each of said block regions; and quantizing means
for quantizing said image data that has been subjected to said orthogonal
transform processing for each of said block regions,

each of said filtering regions is a cluster which is smaller than
said block region, and which is consisting of one or more adjacent
rectangular regions, each of the rectangular regions being obtained by
equally dividing each of said block regions by 2^n (where n is a natural
number) and each having a size of two or more pixels, and

said filtering processing is performed using a low-pass filter

common to said respective filtering regions.

3. The image compression apparatus according to claim 2,
wherein

said filtering means performs a unification processing for making pixel data within each of said filtering regions discriminated as said unimportant region coincide with one another.

4. The image compression apparatus according to claim 2,
wherein

pickup image data picked up by a monitoring camera is input as said input image data, and

said important regions and said unimportant regions are designated by an operator.

5. The image compression apparatus according to claim 2,
wherein

pickup image data picked up by a monitoring camera is input as said input image data, and

said important regions and said unimportant regions are determined based on a detection signal from a moving body detection sensor.

6. The image compression apparatus according to claim 2,
wherein

said filtering region dividing means divides said input image data

into said filtering regions smaller in size than said block regions.

7. The image compression apparatus according to claim 2,
wherein

said filtering region dividing means divides said input image data
into said filtering regions of two or more types different in size.

8. The image compression apparatus according to claim 2, further
comprising:

an image data output terminal for outputting said preprocessed
image data.

9. (amended) An image transmission system in which a
preprocessing apparatus is connected to a data compression apparatus
through a first communication line, and in which said data compression
apparatus is connected to a data expansion apparatus through a second
communication line, wherein

said preprocessing apparatus includes: the filtering region
dividing means for dividing input image data into a plurality of filtering
regions; region designating means for discriminating important regions
from unimportant regions in said input image data; filtering means for
performing a filtering processing on said unimportant regions for each of
said filtering regions to attenuate a high frequency component of said
input image data; and data transmission means for transmitting said
image data that has been subjected to said filtering processing to said
first communication line,

said data compression apparatus includes: block region dividing means for dividing preprocessed image data into a plurality of block regions, each shape of which is rectangular; orthogonal transforming means for performing an orthogonal transform processing on said image data for each of said block regions; quantizing means for quantizing said image data that has been subjected to said orthogonal transform processing for each of said block regions; and data transmitting means for transmitting encoded image data to said data expansion apparatus through said second communication line,

each of the filtering regions is a cluster which is smaller than said block region, and which is consisting of one or more adjacent rectangular regions, each of the rectangular regions being obtained by equally dividing each of said block regions by 2^n (where n is a natural number) and each having a size of two or more pixels, and

said filtering processing is performed using a low-pass filter common to said respective filtering regions.

10. The image transmission system according to claim 9, further comprising:

an image display apparatus that is connected to said first communication line, and that displays said preprocessed image data.

11. (amended) A data compression preprocessing apparatus for preprocessing image data input to a data compression apparatus that divides said image data into a plurality of rectangular block regions, each shape of which is rectangular, and that performs an orthogonal transform

and a quantization on said input data for each of the block regions, the data compression preprocessing apparatus comprising:

filtering region dividing means for dividing said input image data into a plurality of filtering regions;

region designating means for discriminating important regions from unimportant regions in said input image data; and

filtering means for performing a filtering processing on said unimportant regions for each of said filtering regions to attenuate a high frequency component of said input image data, wherein

each of said filtering regions is a cluster which is smaller than said block region, and which is consisting of one or more adjacent rectangular regions, each of the rectangular regions being obtained by equally dividing each of said block regions by 2^n (where n is a natural number) and each having a size of two or more pixels, and

said filtering processing is performed using a low-pass filter common to said respective filtering regions.

12. (amended) A computer program for preprocessing image data input to a data compression apparatus that divides said input image data into a plurality of block regions each shape of which is rectangular, and that performs an orthogonal transform and a quantization on said input image data for each of said block regions, the computer program comprising procedures for executing:

a filtering region dividing step of dividing said input image data into a plurality of filtering regions;

a region designating step of discriminating important regions

from unimportant regions in said input image data; and
a filtering step of performing a filtering processing on said unimportant regions for each of the filtering regions to attenuate a high frequency component of said input image data, wherein
each of said filtering regions is a cluster which is smaller than said block region, and which is consisting of one or more adjacent rectangular regions, each of the rectangular regions being obtained by equally dividing each of said block regions by 2^n (where n is a natural number) and each having a size of two or more pixels, and
said filtering processing is performed using a low-pass filter common to said respective filtering regions.